COVER SHEET

TEST PROCEDURE PREPARATION:

Prepared by: NSWC PHD DAM NECK DET CODE 6E10 Date: 1 DEC 98
TDA Organization and Code

TEST PROCEDURE REVIEW:

Reviewed by: NSWC PHD DAM NECK DET CODE 6D10 Date: 4 JAN 99
TDM Organization and Code

DOCUMENTATION CERTIFICATION:

Approved by: _____ Date: _____
TDD Organization and Code

REVISION RECORD

REV/CHG	DESCRIPTION	APPROVAL INITIAL	APPROVAL DATE
-	Original Issue	NSWC	24 NOV 97
A	Incorporated validation changes.	FES	31 DEC 98

LIST OF EFFECTIVE PAGES

PG-REV	PG-REV	PG-REV	PG-REV	PG-REV	PG-REV	PG-REV
1 - A	2 - A	3 - A	4 - A	5 - A	6 - A	7 - A
8 - A	9 - A	10 - A	11 - A	12 - A	13 - A	14 - A

TEST OUTLINE

1. OBJECTIVE:

   To verify that the 63812-204850 Decoder, RADDS to 6 Wire DX/DY (63812-204850 Decoder) is operating properly during initial lite-off.

2. ESTIMATED TESTING TIME:

   1 hour

3. REFERENCES:

   SE245-AE-MMO-A10, Technical Manual for the Radar Signal Distribution Switchboard SB-4229A(V)/SP, Addendum 5, EC-5

4. TEST OR SUPPORT EQUIPMENT AND MATERIAL:

GENERIC NAME	QUANTITY	IDENTIFYING INFORMATION
a. Frequency Counter	1	SCAT 4296 or equivalent
b. Cable, Coaxial, 75 Ohms	1	BNC
c. Multimeter, Digital	1	SCAT 4237 or equivalent
d. Oscilloscope	1	SCAT 4308 or equivalent
e. Terminator, 75 Ohms	1	SCAT 4596 or equivalent

5. COMPUTER PROGRAMS REQUIRED:

   None

6. PREREQUISITES:

   None

7. SPECIAL CONDITIONS AND SERVICES:

   115 VAC, 1 ϕ, 60 Hz Power

8. EQUIPMENT INVOLVED IN TEST:

   63812-204850 Decoder

9. CONFIGURATION:

   No field changes required to run this test.

TEST OUTLINE

10. METHOD:

A visual inspection of the 63812-204850 Decoder shall be conducted to ensure it is free of damage, debris and loose wire connections. Power shall be checked to ensure the correct input voltage, and that the output voltage levels from the power supply are within tolerance. The Light Emitting Diode (LED) indicators shall be verified to be functional.

11. STATION ASSIGNMENTS:

STATION	NO. PERSONNEL	COMMENTS
63812-204850 Decoder	1 Electronic Technician	Performs ILO Test

SAFETY INSTRUCTIONS

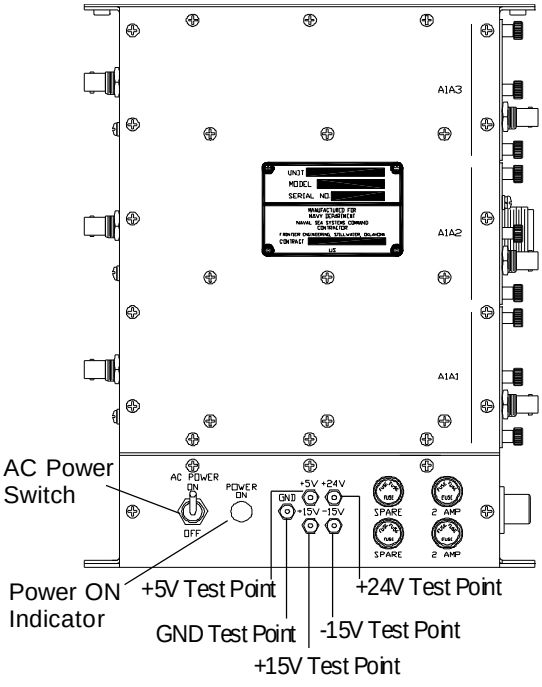
a. The operation of this equipment involves the use of high voltages that are dangerous to life. Extreme caution must be exercised at all times. Do not work on open or disassembled units when power is applied.

b. Turning OFF the 63812-204850 Decoder by using the AC POWER switch does not remove the ship 115 VAC.

INITIAL CONDITIONS AND SETUP

STEP	STATION	INSTRUCTIONS
1	SPDP	Turn OFF and tag Main Circuit Breaker at Ship Power Distribution Panel (SPDP).
2	63812-204850 Decoder	Set AC POWER switch (Figure 1) to OFF position.
3	63812-204850 Decoder	Loosen fasteners for 1A1A1 module (Part Number 302003-1) and remove module. Set dip switch S1-1 to CLOSED and S1-2 to OPEN. Caution 302003-1 Decoder modules are Electrostatic Discharge (ESD) sensitive. Observe ESD precautions while handling.
4	63812-204850 Decoder	Reinstall 1A1A1 module, secure fasteners.

63812-204850 Decoder
Front View



63812-204850 Decoder
Right Side View

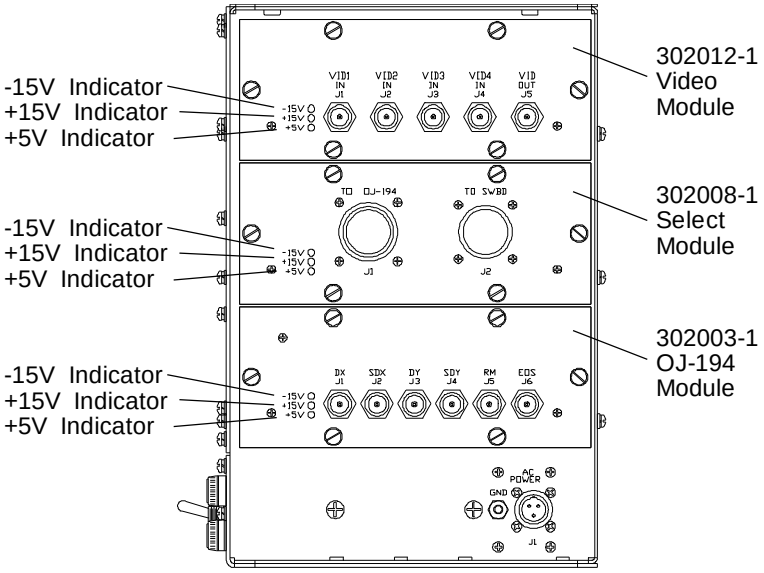


Figure 1. 63812-204850 Decoder

TESTING STEPS

STEP	STATION	INSTRUCTIONS
1	63812-204850 Decoder	Inspect equipment for: a. Presence of foreign matter. b. Loose cables and cable connections. c. Damaged or chaffed cable insulation. d. Loose or missing protective covers. e. Loose modules, fastening hardware, or circuit cards. RECORD on Test Data Recording sheets.
2	63812-204850 Decoder	Disconnect AC Input cable to J1 connector on the units side panel.
3	SPDP	Remove tag and turn ON Main Circuit Breaker at SPDP.
4	63812-204850 Decoder	Verify the following cable voltages and frequency: Contact — Signal Designation A to C — 105 VAC to 125 VAC B to Chassis GND — <1 VAC A to C — ≥50 Hz to ≤63 Hz RECORD on Test Data Recording sheets.
5	SPDP	Turn OFF and tag Main Circuit Breaker at SPDP.
6	63812-204850 Decoder	Reconnect AC Input cable to J1.
7	SPDP	Remove tag and turn ON Main Circuit Breaker at SPDP.
8	63812-204850 Decoder	Set AC POWER switch to ON position.
9	63812-204850 Decoder	Ensure Power ON indicator is lit. RECORD on Test Data Recording sheets.
10	63812-204850 Decoder	Use a Digital Multimeter to measure Power Supply voltages at the following test points. Test Point — Expected Value +5V — +4.75 VDC to +5.25 VDC +15V — +14.25 VDC to +15.75 VDC -15V — -14.25 VDC to -15.75 VDC +24V — +22.8 VDC to +25.2 VDC

TESTING STEPS

STEP	STATION	INSTRUCTIONS
		NOTE Connect the common black lead to a (GND) test point and measure the test points indicated. RECORD on Test Data Recording sheets.
11	63812-204850 Decoder	Ensure voltage indicators for each module (Part Numbers 302003-1, 302008-1, and 302012-1) are lit. Indicator 1A1A1 (302003-1) -15V +15V +5V 1A1A2 (302008-1) -15V +15V +5V 1A1A3 (302012-1) -15V +15V +5V RECORD on Test Data Recording sheets.
12	63812-204850 Decoder	Use an oscilloscope terminated with 75 Ohm impedance to observe the following outputs for module 1A1A1 (Part Number 302003-1). Connector — Output DX (J1) — Varying 0V to 8V ±4V pulses SDX (J2) — Alternates between 0V and -10.5V ±4.5V DY (J3) — Varying 0V to 8V ±4V pulses SDY (J4) — Alternates between 0V and -10.5V ±4.5V RM (J5) — 0V level with 8V ±3V pulses EOS (J6) — 0V level with 3V ±1V pulses RECORD on Test Data Recording sheets.

TESTING STEPS

STEP	STATION	INSTRUCTIONS
13	63812-204850 Decoder	Disconnect input cable to 1A1A2 module (Part Number 302008-1) (1A1A2J1).
14	63812-204850 Decoder	Use test coaxial cable to connect EOS (1A1A1J6) to VID1 IN (1A1A3J1).
15	63812-204850 Decoder	Use an oscilloscope terminated with 75 Ohm impedance to observe the output signal on VID OUT (1A1A3J5). Ensure output resembles the EOS (1A1A1J6) signal as measured in step 12. RECORD on Test Data Recording sheets.
16	63812-204850 Decoder	Disconnect test coaxial cable between EOS (1A1A1J6) and VID1 IN (1A1A3J1).
17	63812-204850 Decoder	Reconnect input cable to 1A1A2 module (Part Number 302008-1) (1A1A2J1).

SHUTDOWN AND SECURING

STEP	STATION	INSTRUCTIONS
1	63812-204850 Decoder	Set AC POWER switch to OFF position.
2	63812-204850 Decoder	Loosen fasteners for 1A1A1 module (Part Number 302003-1). Remove module and set dip switch S1-1 to OPEN.
3	63812-204850 Decoder	Reinstall 1A1A1 module (Part number 302003-1), securing fasteners.

TEST DATA RECORDING

EQUIPMENT UNDER TEST

EQUIPMENT	**SERIAL NO.**
63812-204850 Decoder	_____

PREREQUISITES

None

TEST DATA RECORDING

STEP	TEST ELEMENT		EXPECTED RESULTS	ACTUAL RESULTS
1	Inspect 63812-204850 Decoder			
	a. Presence of foreign matter.		None	_____
	b. Loose cables and cable connections.		None	_____
	c. Damaged or chaffed cable insulation.		None	_____
	d. Loose or missing protective covers.		None	_____
	e. Loose modules, fastening hardware, or circuit cards.		None	_____
4	AC POWER INPUT CONNECTOR VOLTAGE LEVEL			
	J1 CONTACT			
	A to C		105 VAC to 125 VAC	_____VAC
	B to Chassis Ground		< 1 VAC	_____VAC
	A to C		≥50 Hz to ≤63 Hz	_____Hz
9	POWER ON INDICATOR IS LIT			
	AC POWER Switch		Indicator is Lit	_____
10	POWER SUPPLY TEST POINT VOLTAGES			
	Power Supply			
	+5V		+4.75 VDC to +5.25 VDC	_____VDC
	+15V		+14.25 VDC to +15.75 VDC	_____VDC
	-15V		-14.25 VDC to -15.75 VDC	_____VDC
	+24V		+22.8 VDC to +25.2 VDC	_____VDC

_____	_____	_____	_____
SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE

TEST DATA RECORDING

STEP	TEST ELEMENT	EXPECTED RESULTS	ACTUAL RESULTS
11	MODULE FRONT PANEL LEDS		
	1A1A1 (302003-1)		
	-15V	Lit (Green)	_____
	+15V	Lit (Green)	_____
	+5V	Lit (Green)	_____
	1A1A2 (302008-1)		
	-15V	Lit (Green)	_____
	+15V	Lit (Green)	_____
	+5V	Lit (Green)	_____
	1A1A3 (302012-1)		
	-15V	Lit (Green)	_____
	+15V	Lit (Green)	_____
	+5V	Lit (Green)	_____
12	AZIMUTH OUTPUT TEST		
	1A1A1		
	DX (J1)	Varying 0V to 8V ±4V pulses present	_____
	SDX (J2)	Alternates between 0V and –10.5V ±4.5V	_____
	DY (J3)	Varying 0V to 8V ±4V pulses present	_____
	SDY (J4)	Alternates between 0V and –10.5V ±4.5V	_____
	RM (J5)	0V level with 8V ±3V pulses present	_____
	EOS (J6)	0V level with 3V ±1V pulses present	_____
15	VIDEO OUTPUT TEST		
	1A1A3		
	Vid Out (J5)	0V level with 3V ±1V pulses present	_____

SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE

TEST EQUIMENT USED

List all test equipment utilized in the test including all general and specialized test equipment, special test cables, attenuators, and any other materials requiring calibration. Include extra sheets as necessary to identify all test equipment.

GENERIC NAME	MODEL	SERIAL NO.	CALIBRATION DUE DATE	REMARKS

SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE

COMMENTS

This sheet is provided for the test conductor or Government witness to make appropriate comments including the following:

a. Visual observations of dynamic responses;
b. Erratic or unusual equipment behavior;
c. Operational or handling difficulties;
d. Procedural corrections;
e. Equipment malfunctions;
f. Discrepancies noted during test conduct; and,
g. Waivers including reference to authorization document, i.e., letter, message, etc.

Indicate if a Test Problem Report (TPR) was generated with respect to these or other problems.

SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE